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Electrical Fuzing System

The electrical fuzing system consisted of wire, a toggle switch, 9V battery connector, a power source and initiator. This particular fuzing system does not have a time delay. Once the toggle switch is closed (in the "ON" position) current from the power source would flow to the initiator which in turn would ignite the main charge explosive. The toggle switch in this type of configuration could be referred to as a "suicide switch". Once the toggle switch is closed by the bomber the IED functions.

Wire

Present in the following listed specimens are the fragmented remains of green-insulated, eighteen (18) strand copper-colored wire; Specimens Q582.2, Q582.3, Q582.4, Q582.5, Q603, Q608, Q612 and Q641.

Wire acts as a conductor in the fuzing system to facilitate the flow of an electrical current from a power source to the initiator.

Toggle Switch

Present in specimen Q582 is one (1) toggle switch with a red-colored plastic flip-up cover. When the cover is in the down position, it is covering the metal toggle which is in the off position. The following descriptive information is stamped into the silver-colored metal housing; "20A 12V DC, Made in China" and "On - Off". The two (2) screw-connector posts are in position "1" and "2" while position "3" remains empty. This switch is consistent with an automotive toggle switch used for automotive racing applications.

9V Snap Connector

Present in specimen Q582 is one (1) 9V snap connector consisting of one (1) red and one (1) black insulated wire each having seven (7) strands of silver-colored wire.

Power Source

Present in specimen Q593 is one (1) 9 volt battery consistent with an "Energizer" brand 9 volt battery. The battery has the following descriptive information; "9V 03-2017, Alkaline Battery, 9V Size Format 522, 6LR61 6AM6 9V".

Initiator

No remains of an initiator were found in the submitted specimens for the Watertown scene. Due to an explosive event of this type which generates high pressures and heat, IED components may or may not be recovered during the processing of the scene.

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Non-Electrical Fuzing System

However, based on the configuration of the toggle switch (in the "OFF" position) as it was submitted to the laboratory along with IEDs recovered, it is the opinion of this examiner that this IED was potentially initiated by hobby fuse.

No remains of hobby fuse were found. Due to an explosive event of this type which generates high pressures and heat, IED components may or may not be recovered during the processing of the scene. This hobby fuse was more than likely consumed in the explosion.

This type of non-electrical fuzing system would require a suitable heat source, like a flame, to ignite the hobby fuse which in turn would burn down the length of the fuse and initiate the main charge explosive in the IED.

Fragmentation

Present in the following listed specimens are numerous BBs which are approximately 0.17 inches in diameter. These BBs are consistent with copper-colored BBs which are utilized with pump-action or compressed-gas type BB guns; Specimens Q594, Q595, Q606, Q619, Q624, Q625, Q626, Q632, Q635, Q646, Q662 and Q664.

The addition of any type of metal to an IED will add to its potential fragmentation. Fragmentation is also known as shrapnel. The purpose of shrapnel is to enhance the damage caused by the explosion of an IED, particularly against human targets.

Sealant

Present in the following listed specimens are the fragmented remains of material consistent with a sealant type material; Specimens Q594.1, Q595.1, Q606.1, Q619.1, Q624.1, Q625.1, Q626.1, Q632.1, Q635.1, Q644.1, Q646.1, Q652.1, Q662.1 and Q664.1. It was observed that the BBs which were used as fragmentation were embedded within the sealant material. It appears that the sealant material was used to make a fragmentation sleeve on the inside of the container along with holding the BBs in place.

For additional information on the analysis conducted on the sealant material see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated July 24, 2013.

Cardboard

Present in specimens Q615, Q616 and Q636 is a material consistent with cardboard. It was observed that the three (3) pieces of cardboard were circular in shaped. Each of these pieces was approximately nine and three-fourths (9 $\frac{3}{4}$) inches in diameter. Burnt and black scorch marks were observed on the pieces. Each of these pieces also had two (2) irregular

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shaped holes. The position of these holes is consistent to the location of the two (2) manufactured holes in the lid of the 4L "Fagor" brand pressure cooker.

Pink Paper

Present in the following listed specimens are the fragmented remains of material consistent with a pink-colored paper material; Specimens Q594, Q606, Q626, Q632, Q635, Q646 and Q664. This pink paper appeared to be utilized as backing material for the added fragmentation and separated it from the main charge explosive within the IED.

Tapes

Present in specimen Q635.2 is the fragmented remains of tape consistent with a clear/colorless packaging tape. A nominal width could not be determined based on the condition of the fragmented remains.

Present in the following listed specimens are the fragmented remains of tape consistent with a black-colored electrical tape; Specimens Q582.1, Q603.1, Q604, Q612.1, Q641.1, Q643, Q647 and Q656. Some of the pieces had nominal widths of three-fourths (3/4") of an inch.

The various types of tape listed above were observed within the fragmented remains of the IED. Specifically, the electrical fuzing system and pink paper had fragmented pieces of tape attached. These types of available tape have been commonly used in the construction of IEDs. The ends of the various pieces of tapes contained in the specimens may be suitable for end-matching if similar tapes are recovered during the course of the investigation.

For additional information on the analysis conducted on the various types of tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

Pipe Bombs

Explosive Main Charge

The chemical analysis of specimens Q591 (90 degree elbow) and Q592 (coupler) from Watertown revealed the presence of a low explosive that is consistent with a pyrotechnic mixture. When properly ignited by a suitable source of heat, low explosives are designated to deflagrate and generate gases. Properly confined in a container, the gases generate pressure on the container walls and cause an explosion of the container.

For detailed information on the chemical analysis conducted on the explosive main charge see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

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Container

Present in specimens Q583 and Q584 are two (2) pipe fittings each with two (2) internal (square head plug) end caps. Specimen Q583 is a metal 90 degree elbow fitting approximately five (5") inches in length and specimen Q584 is a metal coupling fitting approximately two and one-half (2 1/2") in length. Each has a nominal diameter of two (2") inches in length with a non-manufacturer made hole near the center of each fitting. Inserted in each hole is a length of green-colored hobby fuse. The four (4) internal (square head plug) end caps which are metal each had a nominal diameter of two (2") inches in length. Each of the above items had the following markings on them; "SLK, CHINA, 2". "SLK" is the trademark and is associated with the manufacturer, Beijing Sai Lin Ke Hardware Company, Ltd. in Haidian, Beijing, China. These types of plumbing fittings are commonly available in home improvement stores such as Home Depot and Lowes.

Non-Electrical Fuzing System

Present in specimens Q584.1 (coupler) and Q585 (90 degree elbow) are lengths of green-colored cannon fuse also commonly referred to as hobby fuse. Each of the pipe bombs had a single piece of hobby fuse inserted into it. The manufacturer of this fuse could not be determined.

Present in specimen Q605 is a length of green-colored hobby fuse collected by local law enforcement personnel at 55 Laurel St, Watertown, Ma.

Hobby fuse consists of fibers woven around either a black powder or perchlorate based core. Hobby fuse is readily available to the general public through numerous online vendors. It burns at a rate of approximately two (2) seconds per inch, although the rate of burning may vary greatly from one roll of fuse to the next.

This fuzing system would require a suitable heat source, like a flame, to ignite the hobby fuse which in turn would burn down the length of the fuse and initiate the main charge explosive in the IED.

For information on the chemical analysis conducted on the hobby fuse see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

Fragmentation and Sealant

Present in specimens Q583 and Q584 are BBs consistent with copper-colored BBs which are utilized with pump-action or compressed-gas type BB guns. The BBs are approximately 0.17 inches in diameter. They are embedded in material consistent with a sealant type material within the interior of each pipe fitting.

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The addition of any type of metal to an IED will add to its potential fragmentation. Fragmentation is also known as shrapnel. The purpose of shrapnel is to enhance the damage caused by the explosion of an IED, particularly against human targets.

Tapes

Present in specimens Q583.1 and Q584.2 are two (2) lengths of tape consistent with black-colored electrical tape. These pieces had a nominal width of three-fourths (3/4") of an inch. This tape was wrapped around each pipe fitting and appeared to secure the hobby fuse. The ends of the tapes contained in the specimens may be suitable for end-matching if similar tapes are recovered during the course of the investigation.

Present in specimens Q583.2 and Q584.3 are lengths of tape consistent with white-colored tape which is commonly referred to as Teflon tape. Each of the internal (square head plug) end caps which were attached to the pipe fittings had Teflon tape wrapped around its threads.

For additional information on the analysis conducted on the various types of tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

IED Fragmented RemainsFragmentation (Pipe and BBs)

Present in the following listed specimens are numerous fragmented remains that are consistent with metal pipe fittings; Specimens Q577, Q579, Q580, Q581, Q586, Q587, Q609, Q610, Q611, Q613, Q614, Q622 (internal end cap), Q623, Q629, Q630, Q631, Q634 (internal end cap), Q645, Q648, Q653, Q655 and Q663. Observed on various pieces of fragmentation (Q579, Q613, Q645 and Q648) were small circular indentations within the metal consistent in size with BBs.

Present in specimens Q622 and Q634 are metal end caps consistent with internal (square head plug) end caps which have a nominal diameter of two (2") inches in length. Each of the above items had the following markings on them; "SLK, CHINA, 2". "SLK" is the trademark and is associated with the manufacturer, Beijing Sai Lin Ke Hardware Company, Ltd. in Haidian, Beijing, China. This type of plumbing fitting is commonly available in home improvement stores such as Home Depot and Lowes.

Present in the following listed specimens are numerous BBs which are approximately 0.17 inches in diameter. These BBs are consistent with copper-colored BBs which are utilized with pump-action or compressed-gas type BB guns; Specimens Q594, Q619, Q625, Q633, Q644, Q650, Q652 and Q661.

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The addition of any type of metal to an IED will add to its potential fragmentation. Fragmentation is also known as shrapnel. The purpose of shrapnel is to enhance the damage caused by the explosion of an IED, particularly against human targets.

IEDExplosive Main Charge

The chemical analysis of specimen Q590 from Watertown revealed the presence of a low explosive that is consistent with a pyrotechnic mixture. Also present in the container which had approximately three (3lbs) pounds of the pyrotechnic mixture were numerous lengths of green-colored hobby fuse, specimen Q782. When properly ignited by a suitable source of heat, low explosives are designated to deflagrate and generate gases. Properly confined in a container, the gases generate pressure on the container walls and cause an explosion of the container.

For detailed information on the chemical analysis conducted on the explosive main charge see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

Container

Present in specimen Q781 is one (1) plastic container consistent with a "Rubbermaid" brand container. The dimensions of this container with the clear plastic base and white-colored top are approximately nine and three-fourths inches in width by nine and three-fourths inches in length by four and five-eighths inches in height (9 3/4" x 9 3/4" x 4 5/8").

Non-Electrical Fuzing System

Present in specimen Q781.1 is green-colored cannon fuse also commonly referred to as hobby fuse. Three (3) lengths of hobby fuse were taped together and inserted through the container lid. The manufacturer of this fuse could not be determined.

Hobby fuse consists of fibers woven around either a black powder or perchlorate based core. Hobby fuse is readily available to the general public through numerous online vendors. It burns at a rate of approximately two (2) seconds per inch, although the rate of burning may vary greatly from one roll of fuse to the next.

This type of non-electrical fuzing system would require a suitable heat source, like a flame, to ignite the hobby fuse which in turn would burn down the length of the fuse and initiate the main charge explosive in the IED.

For information on the chemical analysis conducted on the hobby fuse see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

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Tape

Present in the specimen Q781.3 and Q781.3.1 are pieces of tape consistent with a black-colored electrical tape. These pieces had a nominal width of three-fourths (3/4") of an inch. The ends of the tapes contained in the specimens may be suitable for end-matching if similar tapes are recovered during the course of the investigation.

For additional information on the analysis conducted on the tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

Transmitter

Present in specimen Q575 is one (1) radio-controlled (RC) transmitter consistent with a FlySky FS-GT3B 2.4 Ghz 3 channel radio-controlled (RC) transmitter. This transmitter was modified from its original configuration. The plastic pistol grip section along with the steering wheel and throttle trigger were removed. The battery box section was secured under the transmitter circuit-board with black-colored tape. The backside of the circuit-board has the following descriptive information; "2012/02/04 FS-GT3B-M REV: 3.1" along with the "FlySky" logo visible in the center of the board.

For information on the analysis conducted on the radio-controlled (RC) transmitter see the Report of Analysis by Michael D. McFarlane, the Cryptologic and Electronic Analysis Unit (CEAU), from the FBI Digital Forensic and Analysis Section, dated April 3, 2014.

Tape

Present in the specimen Q575.1 are pieces of tape consistent with a black-colored electrical tape. These pieces had a nominal width of three-fourths (3/4") of an inch. The ends of the tapes contained in the specimens may be suitable for end-matching if similar tapes are recovered during the course of the investigation.

For additional information on the analysis conducted on the tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

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Backpack

Present in the following listed specimens are small fragmented remains that are consistent with one (1) black-colored "Fox" brand backpack; Specimens Q263.1, Q266.2, Q267.2 and Q268.1.

The "Fox" brand of backpack is owned by FOX HEAD Inc., 16752 Armstrong Ave., Irvine, California 92606.

Container

Present in the following listed specimens are the fragmented remains that are consistent with one (1) silver-colored, six liter (6 L), "Fagor" brand pressure cooker; Specimens Q265.2, Q266.3, Q268.3 and Q269.2.

This "Fagor" brand pressure cooker is from the "Elite Line" series from FAGOR AMERICA, INC., PO Box 94, Lyndhurst, N.J. 07071.

Fragmentation

Present in the following listed specimens are numerous small, steel nails which are approximately 0.58 inches in length and BBs which are approximately 0.17 inches in diameter. The BBs are consistent with copper-colored BBs which are utilized with pump-action or compressed-gas type BB guns; Specimens Q25, Q26, Q35, Q38, Q112, Q257, Q258, Q259, Q260, Q262, Q263, Q264, Q265, Q266, Q266.1, Q267, Q267.1, Q268, Q268.1, Q269 and Q270.

The addition of any type of metal to an IED will add to its potential fragmentation. Fragmentation is also known as shrapnel. The purpose of shrapnel is to enhance the damage caused by the explosion of an IED, particularly against human targets.

Sealant

Present in the following listed specimens are the fragmented remains of material consistent with a sealant type material; Specimens Q260.1, Q268.4 and Q269.4. It was observed that the BBs which were used as fragmentation were embedded within the sealant material. It appears that the sealant material was used to make a fragmentation sleeve on the inside of the container along with holding the BBs in place.

For additional information on the analysis conducted on the sealant material see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated July 24, 2013.

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Cardboard

Present in specimens Q267.2 and Q268.1 are the small fragmented remains of material consistent with cardboard. Burnt and black scorch marks were observed on one of the fragmented pieces. This type of cardboard listed above was observed within the fragmented remains of the IEDs in Scene A and Scene B.

Tapes

Present in specimen Q268.1.2 is the fragmented remains of tape consistent with a silver-colored duct tape. A nominal width could not be determined based on the condition of the fragmented remains.

Present in specimens Q268.1.1 and Q268.1.1.1 are the fragmented remains of tape consistent with a clear/colorless packaging tape. A nominal width could not be determined based on the condition of the fragmented remains.

The two (2) types of tape listed above were observed within the fragmented remains of the IEDs in Scene A and Scene B. Specifically, the container, cardboard and pink paper had fragmented pieces of tape attached. These types of available tape have been commonly used in the construction of IEDs. The ends of the various pieces of tapes contained in the specimens may be suitable for end-matching if similar tapes are recovered during the course of the investigation.

For additional information on the analysis conducted on the various types of tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

SEARCH SITESHonda CRV outside 410 Norfolk St., Apt. 3, Cambridge, MA

Present in specimens Q667 and Q668 are latex gloves found in the Honda CRV. The chemical analysis of these specimens revealed the presence of a low explosive that is consistent with a pyrotechnic mixture.

For information on the chemical analysis conducted on the latex gloves see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

Present in specimen Q672.1 is a sales receipt "#1567" from "RC Cars of Boston" dated "4/08/13 2:28 PM". The store location is at [REDACTED]. On the receipt one item was purchased which is as follows; "Item# 26023, SPM 2300, \$64.99". This item is a "Spektrum DX2E" brand handheld remote control transmitter.

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410 Norfolk St., Apt. 3, Cambridge, MA

Sealants and Adhesives

Present in specimen Q679 is one (1) tube of sealant consistent with "GE PREMIUM WATERPROOF SILICONE" brand of clear sealant. The tip of the sealant tube is not cut open. The tube length is approximately eight and one-half (8 ½").

Present in specimen Q691 is one (1) tube of sealant consistent with "GE SUPREME SILICONE" brand of clear sealant which is inserted into a "WORKFORCE" brand blue-colored caulking gun. The tip of the sealant tube has been cut open. The tube length is approximately eight and one-half (8 ½").

Present in specimen Q701.1 is one (1) small plastic bottle (Net. Wt. 20g) of an adhesive consistent with "Gorilla" brand super glue.

Present in specimen Q702 is one (1) small plastic bottle (2 fl. oz.) of an adhesive consistent with "Gorilla Glue" brand glue.

For additional information on the analysis conducted on the sealant and adhesive material see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated July 24, 2013.

Tape

Present in specimens Q684.2, Q686 and Q695 are three (3) rolls of tape consistent with "COHERE" brand clear packaging tape and each roll has a nominal width of one and seven-eighths (1 7/8") inches.

Present in specimens Q693, Q693.1 and Q725.5 are three (3) rolls of tape consistent with silver-colored duct tape. Specimen Q693 which is consistent with "NASHUA" brand tape has a nominal width of one and seven-eighths (1 7/8") inches. Specimen Q693.1, an unknown brand, has a nominal width of two and seven-eighths (2 7/8") inches. Specimen Q725.5 which is consistent with "ACE" brand tape has a nominal width of one and seven-eighths (1 7/8") inches.

Present in specimen Q725.6 is one (1) roll of tape consistent with "GORILLA TAPE" brand black-colored duct tape with a nominal width of one (1") inch.

Present in specimen Q725.4 is one (1) roll of white-colored tape consistent with polytetrafluoroethylene (PTFE) tape and has a nominal width of one-half (1/2") of an inch. It is housed in a red and white-colored plastic casing and is commonly referred to as Teflon tape. On the red-colored plastic casing is the following descriptive information; "PTFE THREAD SEAL TAPE, MIL SPEC T-27730A, ½" x 520", MADE IN CHINA".

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For additional information on the analysis conducted on the various types of tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

Pink Paper

Present in specimen Q930 is one (1) large roll of pink-colored paper approximately four and five-eighths (4 5/8") inches in diameter and approximately three feet and three-sixteenths of an inch (3' 3/16") in length. This roll of paper is commonly available in home improvement stores such as Home Depot and Lowes. It is sold as red rosin paper and found in the paint and flooring sections of those stores.

Pressure Cooker

Present in specimen Q725.1 is one (1) grey-colored, flexible ring consistent with a silicone/rubber-type gasket. It has an outer diameter of approximately nine and five-eighths (9 5/8") in length. Observed on the inner portion of the ring is the following; "FAG-009 FAG-125" with additional symbols. In the Fagor Elite Pressure Cooker User's Manual, this item is referred to as a silicone gasket. It is positioned around the underside of the lid to provide an air tight seal.

Present in specimen Q725.2 is one (1) black-colored plastic knob which is approximately one and one-half (1 1/2") inches in diameter and approximately two and three-sixteenths (2 3/16") inches in height. In the Fagor Elite Pressure Cooker User's Manual, this item is referred to as the operating valve. It has two (2) pressure settings, a steam release and an unlock position.

BBs

Present in specimens Q689, Q706, Q727, Q927 and Q934.1 are numerous copper-colored BBs approximately 0.17 inches in diameter.

Nails

Present in specimen Q675 are numerous small metal nails in a glass jar with the following label "CAINS Since 1901, Crispy Whole Pickles, Kosher Dill". These nails are approximately 0.58 inches in length.

Hobby Fuse

Present in specimen Q725.11 is a length of green-colored hobby fuse.

Hobby fuse consists of fibers woven around either a black powder or perchlorate based core. Hobby fuse is readily available to the general public through numerous online

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vendors. It burns at a rate of approximately two (2) seconds per inch, although the rate of burning may vary greatly from one roll of fuse to the next.

For information on the chemical analysis conducted on the hobby fuse see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

Christmas Tree Lights

Present in specimens Q726 and Q726.1 is one (1) small box and Christmas tree lights. The red-colored box had the following descriptive information; "200 MINI LIGHTS, MULTI LIGHTS GREEN WIRE". These lights are distributed by FAMILY DOLLAR SERVICES, INC., CHARLOTTE, NC 28201 USA and made in China. Internally, the green-colored insulated wire consisted of sixteen (16) individual copper-colored strands of wire. Observed were three (3) bundles of fifty (50) lights for a total of one hundred and fifty (150) lights present. At the end of one of the bundle of lights, two (2) green-colored wires were cut and fifty (50) lights were missing.

Metal Can Lid

Present in specimen Q725.24 is one (1) metal can lid approximately three and one-eighths (3 1/8") inches in diameter. Observed in the middle of this lid are burnt and black scorching marks. The chemical analysis of specimen Q725.24 revealed the presence of residues from a low explosive that is consistent with a smokeless powder.

For information on the chemical analysis conducted on the metal can lid see the FBI Laboratory Report of David A. McCollam, Explosives Unit, dated May 12, 2014.

Dorm Room at Dartmouth

Tape

Present in specimen Q737 is one (1) roll of tape consistent with silver-colored duct tape with a nominal width of two (2") inches.

BBs

Present in specimens Q 736.1 and Q741 are numerous copper-colored BBs approximately 0.17 inches in diameter.

White Hat

Present in specimen Q744 is one (1) white-colored baseball-style hat. Each side of this hat had the number three (3) which is black and gold in color. On the front of the hat is a

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black-colored "POLO" logo and on the back of the hat is the following; "POLO RALPH LAUREN, MCMLXVII".



Tape

Present in specimens Q792, Q792.1, Q792.2 and Q792.3 are four (4) rolls of white-colored tape consistent with polytetrafluoroethylene (PTFE) tape and have nominal widths of one-half (1/2") of an inch, three-fourths (3/4") of an inch and one (1") inch. They are housed in a white-colored plastic casing and are commonly referred to as Teflon tape. Two (2) rolls are "TaegaSeal" brand tape and the two (2) other rolls have the following information: "T.F.E. Made in U.S.A.".

For additional information on the analysis conducted on the tape see the FBI Laboratory Report of Andria Mehlretter, Chemistry Unit, dated December 17, 2013.

COMPARISON

The nails and BBs which were recovered from Scene A, Scene B, Watertown and the Hospital/Medical Examiner's Office are dimensionally consistent with nails and BBs recovered from 410 Norfolk St., Apt. 3 and the Dorm Room.

In the three (3) pressure cooker IEDs, it appears that the operating valves and silicone gaskets were removed in the construction of the IEDs. An operating valve and a silicone gasket from a "Fagor" brand pressure cooker were recovered from 410 Norfolk St., Apt. 3.

A roll of silver-colored duct tape (specimen Q725.5) recovered from 410 Norfolk St., Apt. 3 is consistent to tape recovered from Scene A, Scene B and the Medical Examiner's Office.

A roll of black-colored duct tape (specimen Q725.6) recovered from 410 Norfolk St., Apt. 3 is consistent to tape recovered from Scene A and Scene B.

The black-colored electrical tape containing a black adhesive component which was recovered from Scene A, Scene B and Watertown was consistent between scenes.

The rolls of clear/colorless packaging tape (specimens Q684.2, Q686 and Q695) recovered from 410 Norfolk St., Apt. 3 are consistent with tape recovered from Scene A, Scene B, Watertown and the Medical Examiner's Office.

The tube of sealant (specimen Q691) recovered from 410 Norfolk St., Apt. 3 is consistent with colorless polymers recovered from Scene A, Watertown and the Medical Examiner's Office.

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The rolls of PTFE tape (specimens Q792, Q792.1, Q792.2 and Q792.3) from the MIT machine shop and the roll of PTFE tape (specimen Q725.4) from 410 Norfolk St, Apt 3 could not be compared to the recovered PTFE tape used in the pipe bombs from Watertown due to its condition.

The representative samples of the green-colored insulated wire recovered from Scene A, Scene B and Watertown were analyzed and are consistent chemically between scenes. Scene B and Watertown are also physically consistent with each having eighteen (18) individual strands of copper-colored wire. Scene A had sixteen (16) individual strands of copper-colored wire.

Based on an external testing agency, the pink-colored paper material recovered in Scene A, Scene B and Watertown "closely match" the roll of pink-colored paper from 410 Norfolk St., Apt. 3.

For additional information on the analysis conducted on the above mentioned types of tape, sealant and adhesive materials or wire insulation see the FBI Laboratory Reports of Andria Mehlretter, Chemistry Unit, dated December 17, 2013 and July 24, 2013.

For additional information on the analysis conducted on the pink-colored paper see the IPS Testing Report of Walter J. Rantanen, Technical Leader - Fiber Science, dated May 20, 2014.

OTHER SUBMITTED SPECIMENS

For specimens that were not addressed above in the "Results of Examinations" section, those items were either analyzed by other forensic disciplines or possessed no relevance to the design/functioning of the IED. For this reason, no detailed examinations were conducted on them related to explosives or hazardous devices.

Methods:

The methods utilized during the analysis of the specimens included examination of photographs, visual inspection, physical measurements, comparisons of observable physical characteristics and reviews of references.

Interpretations and Limitations:

Due to the absence or alterations of specific manufacturer or other unique markings on items of evidence, conclusive identification of the source on an item may not always be effected in every case. Conclusive determination of the exact design and functioning of a

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rendered safe or disassembled improvised explosive device may not be effected in every case due to the conditions of the components.

The explosion and/or fire resulting from the functioning of an improvised or incendiary device can cause extensive damage, such as fragmentation, charring or other severe alterations to items of evidence. Due to the destructive nature of these types of energetic events, conclusive determinations as to the recognition and identification of specific device components, as well as the exact design and functioning of the device, may not always be effected in every case.

Remarks:

This report provides the final results of the device examinations performed in the Explosives Unit on the submitted specimens. For questions about the content of this report, please contact this examiner. You will be advised of additional examination results from the other forensic disciplines under separate reports. The supporting records for the opinions and interpretations expressed in this report are retained in the FBI files.

Additionally, for questions about the status of your submission, including any remaining forensic examinations, please contact Request Coordinator Edward S. Knapp Jr. at [REDACTED]

The submitted specimens will be returned under separate cover via registered mail.

Edward S. Knapp Jr.
[REDACTED]

This report contains the opinions/interpretations of the examiner(s) who issued the report.